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PATENT & TRADEMARK

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On 14 July 2003

TOWNSEND and TOWNSEND and CREW LLP

By: Malinda Dwight

PATENT
Attorney Docket No.: 016285-002500US
Client Ref. No.: 01/MED/082

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Examiner: Jeanine Anne Goldberg
LO YUK MING DENNIS, *et al.*	Art Unit: 1634
Application No.: 09/944,951	AMENDMENT
Filed: August 31, 2001	
For: METHODS FOR DETECTING DNA ORIGINATING FROM DIFFERENT INDIVIDUALS	

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action mailed February 12, 2003, please amend the above-identified application as noted below. A petition to extend time for two months from May 12, 2003 to July 12, 2003 is also submitted herewith. The Commissioner is authorized to deduct any fee due from the undersigned's Deposit Account No. 20-1430.

Amendments to the Claims are reflected in the listing of claims that begins on page 5 of this paper.

Remarks/Arguments begin on page 10 of this paper.

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SEQUENCE LISTING RULES:

The Examiner indicates that the present application fails to comply with the requirements for nucleic acid and peptide sequences set forth in 37 CFR § 1.821(a)(1). In response, applicants respectfully refer the Examiner to Applicants previous Amendment addressing these issues. Applicants have provided a courtesy copy of their previous amendment and the related post card indicating receipt of the Amendment by the Patent Office.

IN THE DRAWINGS

The Examiner indicates that Figure 2 contains sequences that are not identified by sequence ID number. Applicants respond that appropriate correction was made and a sequence ID numbers supplied for the sequences presented in figure 2 in the previous office action, noted above.

The Examiner also states that figures 1, 3 and 4 have multiple drawings that have not been described, and figure 3 has a reference to red-lettered text that does not exist in the figure.

In response, Applicants respectfully request the Examiner enter the following amendments to the specification:

Please replace current figure 3, with the copy of figure 3 attached to this response.

Please delete the present description of Figure 1 on page 7, lines 2-12, and insert the following text in its place:

Figure 1 illustrates the use of an X-linked androgen receptor gene as a female-specific marker in male recipients of bone marrow from female donors.

Figure 1A depicts control samples, indicating normal females possess both methylated (paternal) and unmethylated (maternal) X-chromosomes. In contrast, fig 1A shows normal males only possess an unmethylated (maternal) X-chromosome.

Figure 1B depicts X-linked androgen receptor in male recipients (patients 1-4) of bone marrow from female donors. Prior to bone marrow transplantation, male recipients were subjected to a treatment regime designed to decimate their hematopoietic capacity. In male patient 1, endogenous methylated (maternal) marker has been largely destroyed, while the foreign methylated marker (paternal homolog from the female donor) is present. Patients 2-4 display more pronounced chimerism, each showing the presence of endogenous unmethylated marker, indicating that the treatment regime failed to decimate hematopoietic capacity, as well as exogenous methylated marker indicating that the female bone marrow has been established and is active in the male recipient.

Please delete present description of fig 3 on page 8, lines 1-6, and insert the following text in its place:

Figure 3 depicts portions of bisulfite-treated DNA sequencing profiles for the epigenetic marker in the IGF2-H19 locus, taken from maternal and fetal sources of a pregnant woman, as indicated.

Panels in figure 3*a*, depict samples from sources in the second trimester of pregnancy.

Panels in figure 3*b* depict samples taken in the third trimester. Maternal DNA was isolated from sources free of fetal DNA.

Fetal DNA was isolated from amniotic fluid in the second trimester (fig. 3*a*) and cord blood in the third trimester (fig. 3*b*). Postnatal maternal plasma DNA was isolated approximately 42 months after parturition. Labeled arrows in the maternal plasma panels indicate nucleotide peaks corresponding to mother and fetal markers.